

REMARKS

Status of the Claims

Claims 1-11 are pending with Claims 1 and 5 being independent. Claims 12-15 have been canceled without prejudice to or disclaimer of the subject matter recited therein. Claims 1, 3-5 and 7-11 have been amended. Support for the claim changes can be found in the original disclosure, and therefore no new matter has been added.

Requested Action

Applicant respectfully requests the Examiner to reconsider and withdraw the outstanding objection and rejections in view of the foregoing amendments and the following remarks.

Claim Objection

Claims 1 and 5 are objected to because of an alleged informality therein. In response, while not conceding the propriety of the objection, these claims have been amended to address the points raised by the Examiner. Therefore, Applicant respectfully requests that the objection be withdrawn.

Formal Claim Rejections

Claims 1-15 are rejected under 35 U.S.C. §112, second paragraph. In response, while not conceding the propriety of the rejection, independent Claims 1 and 5 have been amended to address the points raised by the Examiner. Applicant submits that as amended,

these claims now even more clearly satisfy 35 U.S.C. § 112, second paragraph. Therefore, Applicant respectfully requests that the rejection be withdrawn.

Substantive Claim Rejections

Claims 1, 2, 4/1, 4/2, 5, 6, 8/5, 8/6, 9/1, 9/2, 10/1, 10/2, 11/1, and 11/2 are rejected under 35 U.S.C. §103(a) as being unpatentable over US. Patent No. 6,597,817 (Silverbrook) in view of U.S. Patent No. 7,050,607 (Li et al.) and U.S. Patent No. 7,017,115 (Hayashi). Claims 3/1, 3/2, 7/5, and 7/6 are rejected under 35 U.S.C. §103(a) as being unpatentable over Silverbrook in view of Li et al., Hayashi, and U.S. Patent Application Publication No. 20010019620 (Nagai et al.).

In response, while not conceding the propriety of the rejections, independent Claims 1 and 5 have been amended. Applicant submits that as amended, these claims are allowable for the following reasons.

Independent Claim 1 relates to an image processing apparatus comprising image input means for inputting an image, face detection angle-range information determination means, and process control means. The process control means has a mode to control the execution of the face detecting process on the basis of information indicating the angle range determined by the face-detection angle-range information determination means.

Claim 1 has been amended to recite photographing-position information input means for inputting photographing-position information of a camera that photographs the image, the photographing-position information being attached to the image input by the image input means. Claim 1 has also been amended to recite determination means for determining whether or not the image is photographed with the camera being rotated in a

predetermined direction, with reference to the photographing-position information input by the photographing-position information input means. Claim 1 has been further amended to recite that the face-detection angle-range information determination means is for determining an angle range used in a process of detecting a face from the input image on the basis of an angle at which the camera is rotated, when the determination means determines that the image is photographed with the camera being rotated in the predetermined direction.

By this arrangement, the angle range used in a process of detecting a face can be determined on the basis of an angle at which a camera is rotated when an image is photographed, and as a result, the speed of face detection can be increased as compared to conventional approaches that perform face detection in an angle range of 360 degrees.

In contrast, the citations to Silverbrook, Li et al., and Hayashi, are not understood to disclose or suggest face-detection angle-range information determination means for determining an angle range used in a process of detecting a face from the input image on the basis of an angle at which the camera is rotated, when the determination means determines that the image is photographed with the camera being rotated in the predetermined direction, as recited by amended Claim 1. Consequently, these citations are also not understood to disclose or suggest process control means having a mode to control the execution of the face detecting process on the basis of information indicating the angle range determined by the face-detection angle-range information determination means.

Rather, Silverbrook is understood to merely teach the inputting of a direction in which a camera is rotated when an image is photographed, so that, for example, text can be positioned in a rightward direction at position 6 in Fig. 1 thereof. And Li et al. is

understood to merely teach a real-time multi-view face detection method in which 1) an image is divided into sub-windows and input into a detector pyramid architecture, 2) the sub-windows are input into a first detection layer, 3) when a face is not detected from the sub-windows in the first detection layer a process is terminated, whereas when a face is detected from the sub-windows a face detection is determined in a second detection layer, 4) when a detector detects a face in the sub-windows, the detected face is classified by the detector so that a face is detected with a plurality of detectors. As a result, Li et al. is understood to require a plurality of detectors for detecting a face from different directions because the orientation of the photographed face is not known and an angle at which a camera is rotated when an image is photographed is not understood to be attached to the image. In contrast, the present invention does not require multi-view face detection because an angle at which a camera is rotated when an image is photographed can be attached to an image. And an angle range used in a process of detecting a face in an image can be determined on the basis of an angle at which the camera is rotated when the image is photographed.

Consequently, each of these citations is not understood to possess the advantage that the angle range used in a process of detecting a face is determined on the basis of an angle at which a camera is rotated when an image is photographed, and as a result, face detection can occur faster than conventional approaches that performs face detection over an angle range of 360 degrees.

Since amended Claim 1 recites at least two features not understood to be disclosed or suggested by the citations to Silverbrook, Li et al., and Hayashi, Applicant submits that the Office has not yet established a prima facie case of obviousness against amended Claim 1. For these reasons, Applicant respectfully requests that the rejection of Claim 1 be withdrawn. And because independent Claim 5 has been amended in a similar manner, Applicant respectfully requests that the rejection of Claim 5 be withdrawn.

The dependent claims are also submitted to be patentable, due to their dependency from the independent base claims, as well as due to additional features that are recited. Individual consideration of the dependent claims is respectfully solicited.

Conclusion

In view of the above amendments and remarks, the application is now in allowable form. Therefore, early passage to issue is respectfully solicited.

Any fee required in connection with this paper should be charged to Deposit Account No. 06-1205.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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